

REMARKS

By the above amendments, claims 1-3, 5, 6, and 8-12 are revised to place this application in condition for allowance. Currently, claims 1-12 are before the Examiner for consideration on their merits.

First, the claims have been extensively amended in response to the rejection based on 35 U.S.C. § 112, second paragraph and all but one issue is directly resolved by the amendments to the claims. The remaining issue is the definiteness of claim 3. Applicants submit that claim 3 is not indefinite on its face. First, there is nothing intrinsically wrong with defining the shape of the thread in an alternative mode as is claimed. Second, defining the shape as an API buttress thread or round thread is also not vague or indefinite. A simple Google search reveals that API buttress thread is well known in the field of oil well pipe. Moreover, the present specification shows examples of buttress thread and round thread. Since definiteness is measured from the perspective of one of skill in the art and the specification, referring to the thread shape in the claimed fashion is within the purview of 35 U.S.C. § 112, second paragraph and the rejection based on 35 U.S.C. § 112, second paragraph should be withdrawn as applied to claim 3.

Since the indefiniteness rejection as applied to claims 2-12 is overcome and these claims are not rejected over the prior art, these claims are now in condition for allowance.

The only remaining issue is whether a *prima facie* case of obviousness has been established against claim 1. The Examiner rejects claim 1 under 35 U.S.C. § 103(a)

based on, United States Patent No. 4,386,458 to Evans. The Examiner notes that Evans teaches a threaded joint that has a peened surface but admits that the specific depth and stress recited in the claim is not found in Evans. Nevertheless, the Examiner contends that it would be obvious to optimize the peening of Evans and such an optimization would result in the invention.

Applicants traverse the rejection based on Evans on the grounds that the peening of Evans is not the same as that used to produce the claimed characteristics. The rejection is also improper since the optimization allegation is without a basis in fact.

Evans teaches improving the fatigue resistance for couplings and connection joint mechanisms. In Evans, threads are formed or machined by means of the conventional manner after the residual compressive force in the specific zone of the substrate has been induced. And then, if necessary, the roots of the threads are mechanically cold-worked, such as by the use of a peening tool or a roller.

However, the cold-work taught by Evans is not in the least similar to that used in the invention. Moreover, Evans discloses nothing about conventional shot peening as discussed in the background art of the application. As described in paragraphs [0007-0008] of the present application, it is difficult to treat the threaded parts of threaded joints for oil well pipes smoothly using conventional shot peening. This is because the threaded joints for oil well pipes generally adopt a special threaded shape such as an API threaded shape, especially a buttress thread shape as described in Figure 7. This joint has a threaded bottom corner curved part which is a critical point of the fatigue fracture

strength in the threaded joints given the radius of 0.2 mm, or API round threaded shape to which is considered not to suitable to be treated by conventional shot peening.

To solve the aforementioned problems, the present invention discloses a special method for manufacturing a threaded joint for an oil well pipe in claims 2-12. In particular, a hardness of particles, a particle diameter, and air pressure of the injecting and spraying particles are strictly controlled.

The method of the invention is a patentable one according to the Examiner's own determination, which also means that the inventive method is a non-conventional one. According to the unique method of the present invention, a desirable axial-direction residual stress is provided to a threaded joint even if the threaded shape of the threaded joint is a special thread shape adapted to a threaded joint for an oil well pipe. By practicing the invention, a threaded joint for an oil well pipe having a desirable fracture fatigue strength is obtained.

Applicants submit that the characteristics of the threaded joint of claim 1 are related to the inventive processing of claim 2. In the rejection, the Examiner postulates that the characteristics of the joint of claim 1 can be derived from the conventional shot peening of Evans. However, the Examiner has provided no factual basis for drawing this conclusion. In fact, the specification demonstrates that by using the cold-work of the conventional shot peening of Evans, it is difficult to provide the desirable axial-direction residual stress to a threaded joint having a special threaded shape such as a threaded joint for an oil well pipe. The invention is able to provide the desired axial-direction

residual stress and because of this ability, creates a new and unobvious threaded joint for an oil well pipe that has desirable fracture fatigue strength.

Put another way, the assumption that the artisan can arrive at the invention through the conventional shot peening of Evans is pure speculation on the part of the Examiner. In the rejection, the Examiner baldly asserts that the peening could be manipulated to achieve an optimum result. The Examiner does not describe what the manipulation entails. Moreover, the Examiner does not describe what is the result effective variable being optimized. The general act of peening involves a multitude of variables and merely citing peening as the variable being optimized does not provide sufficient detail to arrive at the invention. The invention of claim 1 is not defined in terms of varying the frequency of peening. Instead, claim 1 defines a particular part of a joint and a particular stress in the particular part at a particular depth. None of these variables is mentioned in Evans. The Examiner is saying that one of skill in the art could somehow both decide that the residual stress at a certain depth in a certain part of the joint that needs to be optimized and then arrive at the claimed values. This is pure speculation on the Examiner's part and this speculation cannot act as the articulated reasoning required by *KSR* to formulate a rejection based on 35 U.S.C. § 103(a).

The Examiner's attention is also directed to comparison made in the specification, see Tables 2-4 and their accompanying description and the discussion of the prior art in paragraphs [0008 and 0009]. The prior art discussion reveals that the threaded joints that have buttress threads or rounded threads are not even candidates for conventional shot peening since the processing/particles are not suitable to provide a uniform hardness

given the configuration of these joints. Referring now to the comparison, this shows that the inventive process produces a joint with unexpected improved properties in terms of fatigue strength for these types of joints. This is further substantiation that the joint of claim 1 is more than an optimization of a conventional shot peening on a threaded joint; it is a joint that has properties that are both novel and unobvious and deserving of patent protection.

To summarize, the Examiner has committed error in assuming that the invention is nothing more than an optimization of the conventional shot peening of Evans. To the contrary, the structure of claim 1 is produced by the inventive method of claim 2 and since Evans fails to teach or suggest this method, it is improper for the Examiner to assume that the invention can be derived from Evans. The Examiner has also committed error in assuming that the values of claim 1 are result effective variable that can be optimized. No such direction is found in Evans and the allegation that the invention is merely an optimization is without a factual basis.

If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

Again, reconsideration and allowance of this application is respectfully requested.

The above constitutes a complete response to all issues raised in the Office Action dated June 3, 2009.

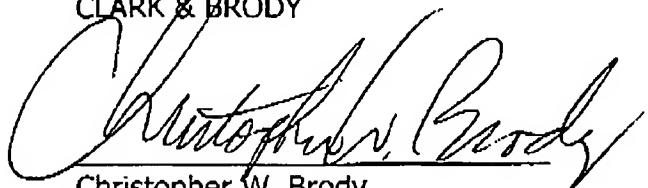
Applicants respectfully submit that there is no fee required for this filing.

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